REMARKS

The Examiner has rejected claims 1 and 10 of the present application under 35 U.S.C. § 102 as being anticipated by Nelson. Applicant respectfully disagrees with this rejection, primarily because the structural arrangement of Nelson requires two separate centrifugal fans, one for drawing air to be cleaned from the surrounding environment through the filter units and the other for reversing flow to remove collected dust from the filters (Col.2, Ln.14-28). Applicant needs neither the second centrifugal fan nor the associated equipment and design limitations.

Nelson explains that the problem with the prior art at the time of his invention was that, in order to reverse air flow through a filter to effectuate the cleaning of the filter, it was necessary to have not only the environment cleaning vacuum source but also an additional air compressor and associated conduits and valving to provide air at high pressure against the filter to be cleaned (Col.1, Ln. 29-36).

Nelson's solution to the problem is to use a single shaft with a plurality of notched disks or cams to effect the necessary reverse flow while normal flow of air for cleaning the environment is continued (Col.1, Ln. 51-56). Nelson argues that this eliminates the requirement for an air compressor to supply air at high pressure to clean the filters and the associated conduits and valving (Col.1, Ln.66-Col.2, Ln.2). To eliminate these components, Nelson uses a first centrifugal fan to draw air through the filter units (Col.2, Ln. 19-20). Each filter unit is connected to the centrifugal fan through a plurality of ducts, one to each filter (Col.2, Ln.20-22). These ducts must, to accomplish his purpose, be arranged in side-by-side relationship (Col.2., Ln.22-24). Then Nelson introduces a second centrifugal fan, which is driven on the same shaft

as the first centrifugal fan, to reverse air flow through the ducts to clean the filters (Col.2, Ln. 24-28). This fan requires a transverse duct connected from the centrifugal fan and extending transversely of the side-by-side ducts. The second centrifugal fan draws air in the opposite direction through the duct system than the first centrifugal fan so as to clean the filters (Col.2, Ln.28-43). In other words, one centrifugal fan is used to clean the room and the other centrifugal fan is used to clean the filter.

The net result of this configuration is that Nelson requires two centrifugal fans, one to force air through the ducts in one direction and another to force it through the ducts in another direction, a common shafting arrangement so that the fans can be driven by the same motor, a first array of ducts that must be in side-by-side relationship, a separate duct which must be arranged transverse to and contiguous to a side-by-side array of ducts and a multitude of devices that are necessary to operate and control the system. While Nelson eliminated the air compressor of the prior art, he has replaced it with a second centrifugal fan and additional components and structural requirements. Thus, Nelson recognizes the problem, but his two fan solution essentially has the same problems encountered in the compressor configuration of the prior art.

Applicant has solved the problem that Nelson set out to solve without the use of the second centrifugal fan and without the side-by-side and transverse duct limitations and associated controls that go with it. This can best be understood by analysis of applicant's Figure 1 in relation to the elements of claim 1 (the analysis with respect to claim 1 is also applicable to claim 10). Two copies of applicant's Figure 1 are attached hereto, color coded to illustrate the differences in operation in room cleaning air flow and filter cleaning air flow. In the red coded version of Figure 1, the room cleaning air flow pattern resulting from Applicant's claims 1 and

10 configurations is illustrated. In the green coded version of Figure 1, Applicant's filter cleaning air flow pattern resulting from Applicant's claims 1 and 10 configurations is illustrated.

Looking at the red coded version, all of the filters are being used to clean a room. The vacuum 15 is directly connected by the duct work through the valves 31, 32 and 33 to their filters 21, 22 or 23 in the canister 10 in three discrete defined pneumatic paths. In this operation, air is drawn from ambient air through the input port 14 so that the air from the room to be cleaned is circulated in the canister 10 to each of the filters 21, 22 and 23 and through their respective valves directly to the vacuum source 15. On the other hand, looking at the green coded version, the sequential operating means 17 intermittently switches the valves 31, 32 or 33 from direct connection to the vacuum 15 to direct connection to ambient air 16. As shown in the green coded version, the sequential operating means 17 has put the valve 31 in the ambient air position 31b. The other valves remain in the vacuum positions 32a and 33a. The valve 31 and filter 21 have been cut off from all direct connection to the vacuum 15. The valve 31 and filter 21 are not connected to any other fan, compressor or vacuum source. Since the vacuum 15 is directly connected to the valves 32 and 33 and therefore to the filters 22 and 23, ambient air 16 is pulled through the input port 14 and through the valve ports 32a and 33a by the vacuum 15. Ambient air is also pulled through the valve ambient air port 31b and the filter by the vacuum 15 but in the opposite direction so as to clean the filter 21 without the need for a second fan or compressor or vacuum source and without the filter being directly connected to anything other than ambient air through the valve 31.

Nelson does not teach Applicant's claimed connection of components and, therefore, cannot function without a second centrifugal fan and associated components and limitations (e.g., transverse duct and array of parallel ducts).

Nelson would require Applicant's valve ports 31b, 32b and 33b to be connected, not to ambient air, but to a second fan (or compressor or vacuum as in the prior art) with parallel ducts contiguous to a transverse duct Therefore, applicant respectfully submits that the invention defined in applicant's claims 1 and 10 is distinguished over Nelson and requests that claims 1 and 10 be allowed.

It is understood there is no fee due at this time. However, should a fee deficiency have occurred, please charge Deposit Account No. 50-1971 per 37 C.F.R. § 1.25.

Respectfully submitted,

4/11/05
Date

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1. A vacuum cleaning machine comprising a cannister (10) having an inlet port (14) and at least two outlet ports (11, 12, 13), at least two filters (21, 22, 23) disposed inside of said canister (10), one (21, 22 or 23) in pneumatic communication through a corresponding one (11, 12 or 13) of each of said outlet ports, a vacuum source (15), at least two valves (31, 32, 33) disposed outside of said canister (10), each said valve (31, 32, 33) being in pneumatic communication (31a, 32a, 33a) between said vacuum source (15) and a corresponding one (11, 12 or 13) of each of said outlet ports and permitting air to be drawn by said vacuum source (15) from said inlet port (14) simultaneously through corresponding ones of said filters (21, 22 or 23) and means for sequentially operating (17) said valves (31, 32, 33) to switch said filters (21, 22, 23) from connection (31a, 32a, 33a) to said vacuum source (15) to connection (31b, 32b, 33b) to ambient air (16) and permitting ambient air (16) to be intermittently drawn through (31b, 32b, 33b) corresponding ones of said valves (31, 32, 33) and said filters (21, 22 or 23) into said canister (10).

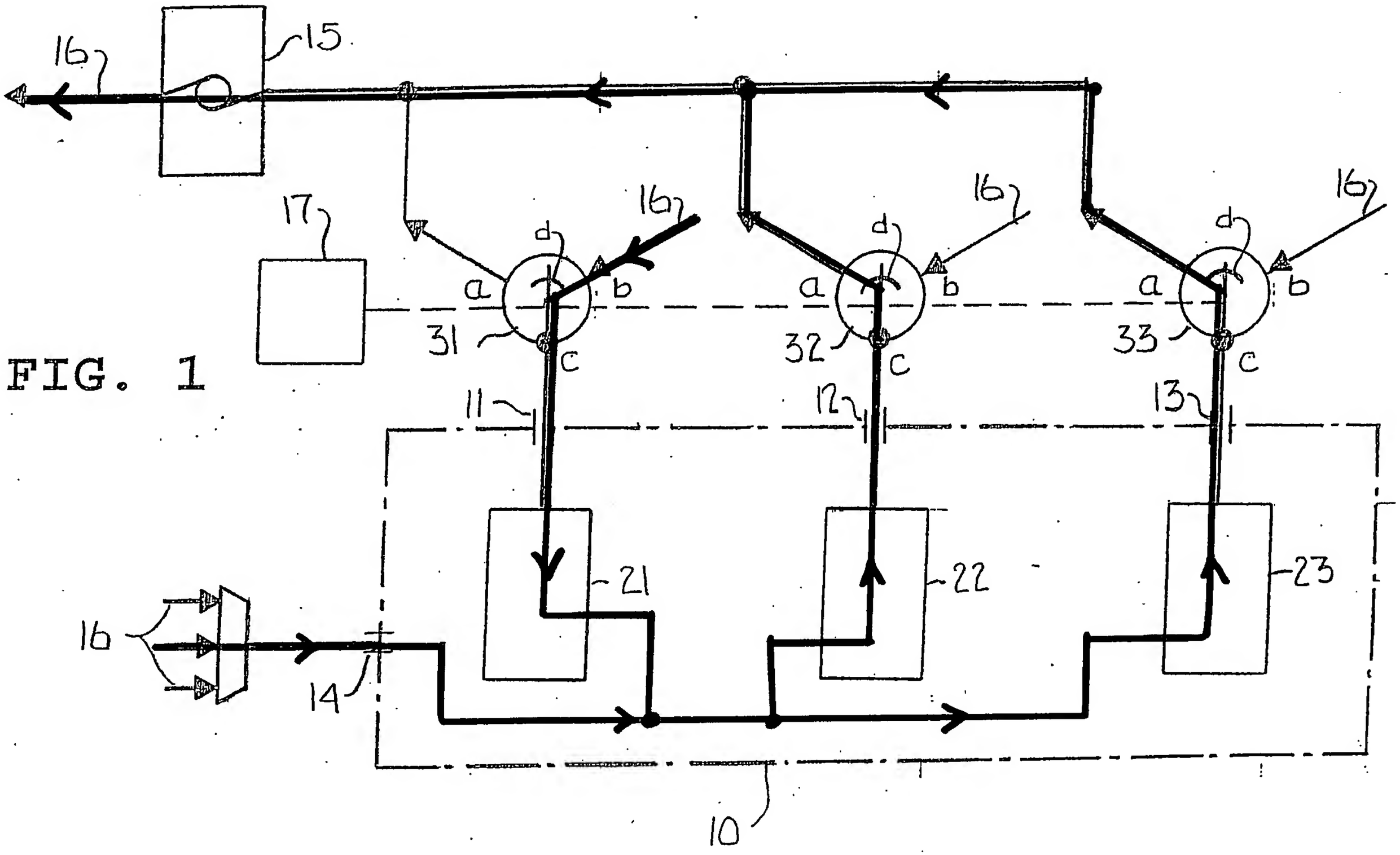

FIG. 1